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Satellite remote sensing of plant functional diversity

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Biodiversity enables ecosystems to thrive through the synergy of functional differences among organisms. While human well-being strongly depends on biodiversity-driven ecosystem services, human actions are also at the root of current unprecedented biodiversity declines. Comprehensive methods to assess the dynamics and state of biodiversity are therefore increasingly urgent. This thesis studies the overlooked capabilities of current satellite observations to conduct large-scale monitoring of plant functional diversity, with a focus on the European Space Agency's flagship Sentinel-2 satellite. Specifically, it addresses the use of spectral diversity metrics, radiative transfer model inversion, the need for adequate in-situ validation, and the role of spatial scale in our perception and estimation of satellite-derived plant functional diversity patterns.

SATELLITE REMOTE SENSING OF PLANT FUNCTIONAL DIVERSITY Leon T. Hauser

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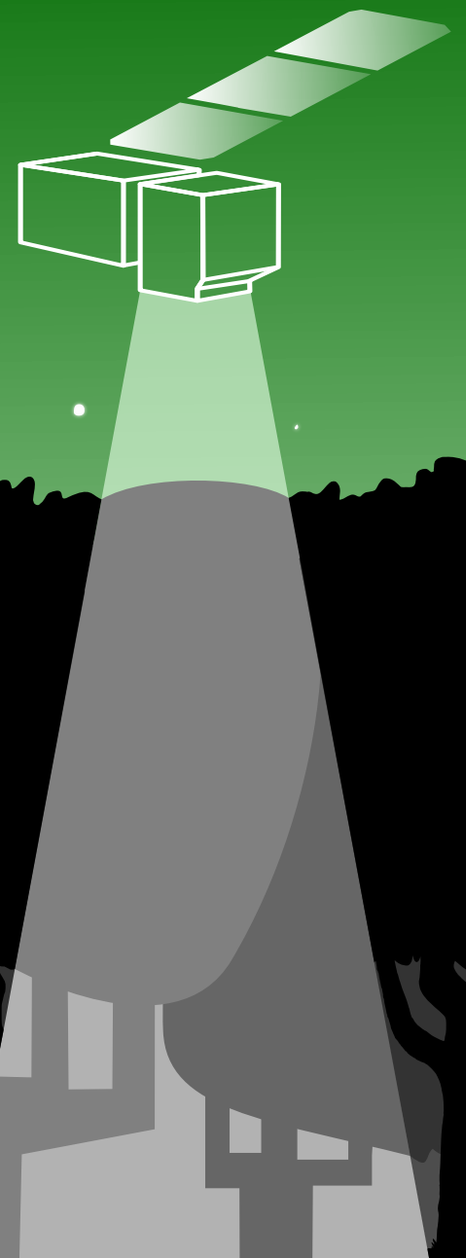
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